

Amendments To the Claims:

1-20. (canceled)

21. (currently amended) In an automation network comprising a plurality of nodes, each node comprising one or more connections to connect each node to one or more devices and one or more other nodes, a method for reconstruction of the network on a decentralized basis when replacing a device, the method comprising:

(a) identifying, by each device in the network in a distributed manner, an order of devices in the network ~~to establish~~ defining a relationship based on predefined hierarchies of connections for each node, comprising, correspondingly for each device in the network:

(i) identifying a corresponding device's associated node;

(ii) determining the order of devices by ascertaining, for the corresponding device's associated node, a number of connections and a predefined hierarchy for the connections, which of the number of connections is connected to the corresponding device and a hierarchy for that connection, and which of the number of connections are still occupied and connected to other nodes and other devices and the hierarchies for those connections; and

(iii) distributively storing the order of devices in the corresponding device, wherein the order of devices stored in; ~~such that after identifying the order of devices correspondingly for each device in the network in accordance with (i) – (iii); each device in the network has distributively stored therein the order of devices, enabling each device to ascertain comprises the order of all of the devices including direct and indirect relationships between all of~~ the devices;

(b) upon replacing a first device with a replacement device by connecting the replacement device to a first node in place of the first device, identifying, by the replacement device, its associated node and which of the other devices is a neighbor of the replacement device ; and

(c) receiving, by the replacement device, locally from the neighbor of the replacement device, the stored order of all of the devices;

(d) ~~thereby allowing reconstruction of~~ the network on a decentralized basis using the stored order of all of the devices received from the neighbor.

22. (cancelled).

23. (currently amended) The method according to claim 21, wherein ~~the stored order of devices enables each device to determine~~ which of the other devices is an upstream neighbor and which of the other devices is a downstream neighbor based on the stored order of all of the devices.

24. (previously presented) The method according to claim 21, wherein each step of the method is repeated periodically.

25. (previously presented) The method according to claim 21, wherein the recited steps are repeated whenever any one of said other devices is no longer connected to the network.

26. (previously presented) The method according to claim 21, wherein the recited steps are repeated whenever a new device is connected to the network.

27. (previously presented) The method according to claim 21, wherein the recited steps are repeated whenever any one of said other devices is replaced by a new device.

28-30. (canceled)

31. (previously presented) The method according to claim 21, wherein determining which of the number of connections are still occupied and connected to other nodes and other devices is performed with MAC addresses.

32. (currently amended) The method according to claim 21, wherein the step of identifying the order of devices ~~to establish a relationship~~ includes determining IP addresses of all the other devices.

33. (previously presented) The method according to claim 21, wherein the method is executed by a computer program product.

34 - 37. (canceled)

38. (previously presented) The method according to claim 21, applied to an automation system containing controls, operator units, drives and actuators as the devices.

39. (previously presented) The method according to claim 21, wherein the network is an Ethernet containing personal computers or peripherals as the devices.

40. (previously presented) The method according to claim 21, applied to a network installed in a rail transport system containing traction vehicles and cars as the devices.

41. (currently amended) In a reconfigurable network comprising a plurality of devices physically interconnected in a sequence, a method for identifying an order of devices in the network ~~thereby enabling determination of~~ indicating relative spatial arrangements among the devices including directional information, wherein the network contains a number of nodes interconnected in a sequence corresponding to the interconnection of the devices, and wherein each of the nodes has a number of connections for interconnecting the nodes and the devices, the method comprising:

configuring the network according to a first hierarchical arrangement of the connections which ~~establishes~~ includes relationships among the nodes ~~determinative of~~ indicating the relative spatial arrangements among the devices including directional information by:

identifying, by each device in the network in a distributed manner, an order of devices in the network ~~to establish~~ indicating a relationship based on predefined hierarchies of connections for each node, comprising, correspondingly for each device in the network:

- (i) identifying a corresponding device's associated node and type of device;
- (ii) determining the order of devices by ascertaining, for the corresponding device's associated node, a number of connections and a predefined hierarchy for the connections, which of the number of connections is connected to the corresponding device and a

hierarchy for that connection, and which of the number of connections are still occupied and connected to other nodes and other devices and the hierarchies for those connections; and

(iii) distributively storing the order of devices in the corresponding device; such that after identifying wherein the order of devices correspondingly for stored in each device in the network in accordance with (i) – (iii), each device in the network has distributively stored therein the order of devices, enabling each device to ascertain comprises the order of all of the devices including direct and indirect relationships between the devices determinative of indicating the relative spatial arrangements among all of the devices;

providing by each device in the network the directional information and the type of device for the other devices in the network .

42. (currently amended) The method of claim 41 wherein the network comprises a plurality of computer devices each positioned on a vehicle or car in a transport arrangement to provide passengers with the directional information and the type of device for the other devices in the network.